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**I. THE LIMITED NATURE AND SCOPE OF THIS MOTION RELATED TO CLAIMS BY THE PLAINTIFFS THAT THE WHOLE LOWER FOX RIVER MODEL OR WLFRM (“THE MODEL”) WAS CALIBRATED.**

This Motion seeks *limited* reconsideration of the Court’s August 30, 2012 Order (Dkt. 498, “the Order”) denying Certain Defendants’ Motion for Summary Judgment or, In the Alternative, to Supplement the Administrative Record (Dkt. 386, “the Original Motion”). As the language of the Order reflects, the focus of Certain Defendant’s Original Motion was the missing Model components, although Certain Defendants also presented evidence contained in the Administrative Record that the Model failed the agreed upon standards for calibration.<sup>2</sup> On three narrow grounds discussed below, Certain Defendants ask the Court to reconsider the Order as it relates to whether the Model was calibrated.

By this Motion, Certain Defendants are *not* asking the Court to re-open the discovery period or move the December 3, 2012 trial date.<sup>3</sup> This Motion does not address other key failures documented in the Administrative Record where the State of Wisconsin Department of Natural Resources (“WDNR”) and the United States Environmental Protection Agency (“EPA”) failed to apply relevant factors in the selection of the remedy for Operable Units (“OUs”) 2-5, making the remedy selected arbitrary and capricious or otherwise not in accordance with law. 42 U.S.C. § 9613(j)(2). We plan to address these key failures in our response to the pending motion for summary judgment filed by the Plaintiffs on September 12, 2012 (Dkt. 508).

The first ground for reconsideration is that statements in the Order about calibration are based on the declaration of Dr. Xiaochun Zhang (which itself is not in the Administrative

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<sup>2</sup> See Certain Defendants’ Demonstrative Evidence at Dkt. 453 at 24-36, which provides excerpts of some of the documents in the Administrative Record that demonstrate that the Model was not calibrated.

<sup>3</sup> Certain Defendants have a pending Motion to Compel, which seeks additional documents pertinent to these issues that were already requested during the fact discovery period. Dkt. 491.

Record). According to the Order, “the models *were* . . . *calibrated* based on known data” and “DNR could compare the model’s predictions to actual data in the River, which *allowed its scientists to calibrate the model* to achieve more accurate results. (*Zhang Decl.*, ¶ 17-18.)” Dkt. 498 at 3 (emphasis added); *see also* Dkt. 498 at 6.<sup>4</sup> These statements should be reconsidered to the extent they can be read to preclude the Certain Defendants from presenting evidence contained *within* the Administrative Record that the Model was not calibrated. Both evidence in the Administrative Record and evidence not previously discovered or available before the date Certain Defendants’ Original Motion was filed<sup>5</sup> make it clear that the Model failed the agreed upon standard for calibration of PCBs in sediment. Certain Defendants assert that since the Model was not calibrated, its results had no basis in reason or science and the Model could not provide a rational (rather than arbitrary or capricious) basis for selecting the remedy.

Second, the Court should reconsider its decision to deny expert testimony about the lack of calibration of the Model and its impact on the WDNR and EPA’s decision to approve the remedy. Expert testimony would be helpful to the Court in assessing the impact of the failure to calibrate the Model. The portions of the expert reports of Robert L. Annear Jr. and Ken J. Susilo filed with this Motion set forth the scope of the expert testimony concerning the failure to calibrate the Model and the effect of that failure.

Finally, the Court should reconsider the Order because additional evidence obtained after Certain Defendants’ Original Motion was filed demonstrates that Mark Velleux was the WDNR

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<sup>4</sup> According to the Order, “As *Dr. Zhang* describes in great detail, the Model was developed over more than ten years of field studies and *calibrated* to known PCB concentrations in the River. The Model was not a secret program run in a mysterious back room in some nameless government building, but was instead the product of years of work and interaction with several interested parties, including some of the Defendants.” Dkt. 498 at 6 (emphasis added).

<sup>5</sup> *See* Supplemental Declaration of Robert L. Annear Jr. and Declaration of Philip C. Hunsucker filed in support of this Motion.

employee charged with attempting to calibrate the Model and, ultimately was the person who declared the model “calibrated,” despite the fact that the Model did not meet the agreed upon standards for calibration. Declaration of Philip C. Hunsucker (“Hunsucker Decl.”), Exhibit 5 at 194:9-195:3, 201:14-204:20 [Velleux Depo.].<sup>6</sup> *EPA did not do any of its own modeling*, relied *entirely* on WDNR’s modeling and only assigned *one* person – James Hahnenberg – to oversee WDNR’s modeling efforts. Exhibit 4 at 39:15-40:3, 48:13-16, 213:2-7 [Hahnenberg Depo.]. Mr. Hahnenberg admits he is not a modeler. *Id.* at 37:22-24. Giving Dr. Velleux the authority to declare the model “calibrated” is particularly troublesome because the Model was essentially the creation of *one* person, the same Mark Velleux. Dr. Velleux was the person who developed the IPX computer “engine” for the Model as well as customized pre-processors for the IPX Version 2.7.4. The customized pre-processors are not discussed in the Final Model Documentation report. Exhibit 5 at 213:8-214:3, 216:21-217:4. [Velleux Depo.]. This meant that Mark Velleux had enormous discretion in creating and attempting to calibrate the Model used to select the remedy at the Site. In short, the representation by the Plaintiffs of openness in the process of creating and calibrating the Model is not correct. *See* Hunsucker Decl. ¶¶ 78, 80.

## **II. LEGAL STANDARDS.**

### **A. Exceptions to Record Review.**

There are three recognized exceptions to the general rule that denies supplementation of the Administrative Record. Supplementation is authorized when: (1) The agency relied on documents or materials not included in the record; (2) Supplementation is necessary to explain technical terms or complex subject matter; or, (3) There is a strong showing of agency bad faith. *Pub. Power Council v. Johnson*, 674 F.2d at 791, 794 (9th Cir. 1982); *Sokaogon Chippewa*

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<sup>6</sup> As used in this memorandum, all references to “Exhibit” refer to Exhibits to the Declaration of Philip C. Hunsucker. The point citation is to the Bates number, docket page or deposition page and line.

*Cnty. v. Babbitt*, 929 F. Supp. 1165, 1172 (W.D. Wis. 1996) *on reconsideration in part*, 961 F. Supp. 1276 (W.D. Wis. 1997); *United States v. Washington Dept. of Transp.*, 450 F. Supp. 2d 1207, 1213 (W.D. Wash. 2006); *United States v. Amtreco, Inc.*, 806 F. Supp. 1004, 1006 (M.D. Ga. 1992). Here, all three grounds for supplementation apply. In particular, recently discovered and previously unavailable information produced in this lawsuit establishes Certain Defendants, as a result of agency bad faith, are entitled to supplementation to rebut the Plaintiffs' claims that the Model was "calibrated."

### **B. Motions for Reconsideration.**

Motions to reconsider are appropriate where there is newly-discovered evidence. *Burney v. Thorn Americas, Inc.*, 970 F. Supp. 668, 671 (E.D. Wis. 1997); *see also* Fed. R. Civ. P. 60(b). "Evidence is newly discovered if the party did not know about the evidence and could not have known about it even if it had exercised due diligence." *Id.* A timeline demonstrating that Certain Defendants could not have obtained the evidence discussed in this Motion prior to filing their Original Motion follows:

- On May 4, 2012, Certain Defendants filed their Original Motion. Dkt. 388 at 27. At that time, no discovery other than initial disclosures had been completed in the Enforcement Litigation.
- On May 4, 2012 (the same day Certain Defendants' Original Motion was filed), the Court entered the Supplemental CMO, which first set the scope of and discovery deadlines for Phase 1a of this action. Dkt. 401. This was the first time discovery was permitted on Phase 1a issues.
- On May 7, 2012, Menasha served its First Set of Requests for Production to Plaintiff United States of America. Dkt. 481-3. Menasha also served its First Set of Requests for Production to Plaintiff State of Wisconsin (collectively, the "Requests"). Dkt. 481-4.
- On June 1, 2012, the Governments jointly produced five DVDs containing 13,535 documents totaling 54,811 pages. Randall Stone of the United States Department of Justice transmitted the five DVDs via a letter that stated: ***"In advance of our planned production on June 11, we are enclosing DVDs that contain additional computer files that are the***

***subject of your recent Motion for Summary Judgment or Administrative Record Supplementation.***” Exhibit 1 at 1 [Stone letter to Hunsucker] (emphasis added). Accordingly, Certain Defendants, including Menasha, focused their immediate review of documents in advance of their Reply brief for their Original Motion on those contained within the 5 DVDs produced on June 1, 2012.

- On June 12, 2012, the Governments jointly produced the first hard drive containing more than 111,203 documents totaling 574,345 pages.
- On June 21, 2012, the Governments jointly produced a second hard drive containing 95,271 documents totaling 1,366,008 pages.
- On July 9, 2012, Certain Defendants filed their Reply on the Original Motion. Dkt. 447. At the time Certain Defendants’ Reply was filed, Certain Defendants had not and could not have completed its review of all of the 5 DVDs and more than 206,000 additional documents produced by the Governments.
- On July 10, 2012, the Governments jointly produced a third hard drive containing 78,027 documents totaling 743,248 pages.
- On July 24, 2012, the Governments jointly produced a fourth hard drive containing 47,047 documents totaling 453,568 pages.
- On August 16, 2012, the Governments jointly produced a fifth hard drive containing 39,898 documents totaling 298,437 pages.
- On August 22, 2012, Edward Lynch of WDNR was deposed in the Enforcement Litigation.
- On August 23, 2012, the Governments jointly produced a sixth hard drive containing 33,508 documents totaling 547,090 pages.
- On August 24, 2012, Xiaochun Zhang, Ph.D., of WDNR was deposed in the Enforcement Litigation.
- On August 28, 2012, James Hahnenberg of EPA was deposed in the Enforcement Litigation.
- On August 29, 2012, Mark Velleux, Ph.D., formerly of WDNR, was deposed in the Enforcement Litigation.
- On August 30, 2012, the Court denied Certain Defendants’ Original Motion. Dkt. 498.



- On September 7, 2012, fact discovery closed. The United States continued producing documents responsive to the Requests up to and on September 7, 2012.

Hunsucker Decl., ¶¶ 14 - 38.

In addition, the decision “to reconsider an interlocutory order is within the sound discretion of the district court.” *Acme Printing Ink Co. v. Menard, Inc.*, 891 F. Supp. 1289, 1294 (E.D. Wis. 1995). “In contrast to a motion to reconsider a final judgment, which must meet the requirements of Federal Rule of Civil Procedure 59 or 60, a motion to reconsider an interlocutory order may be entertained and granted as justice requires.” *Id.* at 1295. The Order (Dkt. 498) for which reconsideration is being sought is an interlocutory order of the Court.

### III. THE MODEL FAILED THE AGREED UPON STANDARDS FOR CALIBRATION.

For calibration of the models used by WDNR for the remedial decisions, WDNR and the PRPs agreed on the standards contained in Tech Memo 1.<sup>7</sup> *See* Exhibit 6 [Tech Memo 1]; *see also* Hunsucker Decl., ¶¶ 62-64. A key requirement of Tech Memo 1 was that:

The mathematical representation of the physical, chemical, and biological characteristics of ***the modeled system should be consistent with the observed behavior of the real system*** and appropriate for the planned application, including spatial, temporal, and kinetic contexts. Each environmental process/pathway that can significantly affect contaminant distribution and long-term fate must be included in the mathematical representation of the natural system.

Exhibit 6, AR<sup>8</sup> at DOJEPAN060743 [Tech Memo 1] (emphasis added).<sup>9</sup> This is the essence of the concept of model calibration. According to Tech Memo 1:

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<sup>7</sup> Tech Memo 1 was published on March 13, 1978 and can be found in the Administrative Record at DOJEPAN060727-744. A true and correct copy of Tech Memo 1 is contained at Hunsucker Decl., ¶ 49, Exhibit 6.

<sup>8</sup> “AR” means that the document cited is contained in the Administrative Record.

<sup>9</sup> *See also* Exhibit 6, AR at DOJEPAN060727 [Tech Memo 1] (“[T]he mathematical representation of physical, chemical, and biological processes in a model (embodied by model assumptions) must represent the essential characteristics of the natural system in a manner that can be supported by comparisons between model predictions and observations.”).

- “The process of model development ‘and validation requires **quantitative** as well as some qualitative analysis.” Exhibit 6, AR at DOJEPAN060733 [Tech Memo 1] (emphasis added).
- “The Agreement between the Companies and the State calls for the existing suite of Fox River/Green Bay models to be evaluated. **To accomplish this, quantitative model quality criteria must be established.**” Exhibit 6, AR at DOJEPAN060736 [Tech Memo 1] (emphasis added).
- “The preferred approach is to develop criteria based on management requirements established by all parties prior to initiating the model evaluation process. This approach is preferred since acceptable limits of model performance are defined *a priori*.” *Id.*

Tech Memo 1 required that the Model had to meet the **quantitative standard** of  $\pm 30\%$  of observed values for total suspended solids **and PCBs** for water **and sediment**. Exhibit 11, AR at DOJEPAN062275 [Final Model Documentation Report, Appendix B1] and Exhibit 6, AR at DOJEPAN060736 [Tech Memo 1]. The WNDR itself initiated the requirement of quantitative standards in Tech Memo 1. Exhibit 15 at E-WDNR-649622 [Velleux letter to David Glaser].

As the Court has noted: “It is essentially undisputed that the wLFRM formed the basis of many of the predictions the Governments used to select the remedy.” Dkt. 498 at 3. *See also* Plaintiffs’ Responses to Statements of Undisputed Fact 1-11, Dkt. 440 at 1-11. According to the Final Model Documentation Report in the Administrative Record:

***The wLFRM was used to prepare long-term projections of the trend and magnitude of PCB concentrations in the river for a range of different sediment management cases.*** Over time, water column and sediment PCB concentrations decrease for all cases. This is an expected result since, without significant PCB inputs from point source discharges, the surrounding watershed, or the atmosphere, the PCB inventory of river surface sediments will decrease by dilution and dispersal.

Exhibit 11, AR at DOJEPAN062222 [Final Model Documentation Report, Appendix B1]

(emphasis added). The purpose of the Model – to **predict the trend and magnitude of PCB concentrations in sediment** – is an important consideration for this Motion because, as discussed

below, the Model was not calibrated to the observed behavior of *PCBs in sediment* within the agreed upon calibration standard.

In addition to the quantitative requirement, Tech Memo 1 required that the Model be calibrated using a historical hindcast. Exhibit 6, AR at DOJEPAN060740-741 [Tech Memo 1]. According to Tech Memo 1, a historical hindcast beginning in 1957 and ending in 1995 would be a valuable tool to evaluate model performance over long periods of time. “The more closely predictions and observations agree the stronger the predictive ability of the procedures used to assign model parameters for conditions outside of the short-term calibration. This establishes the predictive capabilities of the models.” Exhibit 6, AR at DOJEPAN060740-741 [Tech Memo 1]. As discussed below, recently discovered and previously unavailable information establishes that: (i) the WDNR knew that the Model did not meet the agreed upon quantitative standard; and, (ii) no historical hindcast was performed. Notwithstanding these shortcomings, WDNR declared the Model “calibrated” anyway. Hunsucker Decl., ¶¶ 104-106.

#### **IV. THE PLAINTIFFS AND DR. ZHANG MISREPRESENTED TO THE COURT THAT THE MODEL WAS CALIBRATED.**

Relying on Dr. Zhang, the Plaintiffs assured the Court in their responsive brief that: “The model was also *calibrated* so that on test runs its predictions matched data reflecting PCB concentrations in Lower Fox River Sediments from 1989 to 1995” and “*After it was calibrated*, the wLFRM was applied to generate *predictive* model runs that assisted the Agencies in selecting remedial actions at the Site. See Dkt. 437<sup>10</sup> at 2-3 (¶¶8-11). See Dkt. 437 at 3-4 (¶¶15-20).” Dkt. 441 at 16 (emphasis added).

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<sup>10</sup> Dkt. 437 is Dr. Zhang’s June 18, 2012 declaration.

Dr. Zhang's declaration is not in the Administrative Record and there *is* information in the Administrative Record contrary to her declaration.<sup>11</sup> Furthermore, based on testimony during her August 24, 2012 deposition, it is clear Dr. Zhang played no role in calibrating the Model. Exhibit 3 at 203:2-15. Finally, testimony from Dr. Zhang in her August 24, 2012 deposition is inconsistent with the claim in her declaration that the Model was calibrated. Dr. Zhang, the State's Rule 30(b)(6) witness on modeling, testified that it would have been *impossible* to calibrate the Model to the agreed standard of  $\pm 30\%$  for PCBs in sediment because there was insufficient data. Exhibit 3 at 101:20-102:16.

According to the Plaintiffs:

It would only be important to have all of the information corroborating the *calibration* runs for the model in the administrative record *if there were some question about whether the model was properly calibrated. In the absence of any indication that the model was not properly calibrated*, there is no reason for the record to contain the information associated with all of the model's calibration runs.

Dkt. 441 at 22-23 (emphasis added). However, at the time of the Court's decision, the Plaintiffs understood that Certain Defendants' experts, Dr. Annear and Mr. Susilo, claimed that the Model was *not calibrated*. *Id.* Recently discovered evidence confirms this was the case.

**V. WDNR KNEW THAT THE MODEL WAS NOT CALIBRATED BEFORE THE REMEDY WAS SELECTED.**

Recently discovered evidence not in the Administrative Record demonstrates that WDNR knew that the Model was not calibrated before the remedy was selected. Evidence obtained by Certain Defendants since the Original Motion was filed on May 4, 2012 establishes the Governments' bad faith – one of the standards for judicial review of their remedy selection – in declaring the Model calibrated when they *knew* the model did not meet the Tech Memo 1

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<sup>11</sup> See Exhibit 11, AR at DOJEPAN062326 [Final Model Documentation Report, Appendix B1], which obliquely acknowledges that the Model does *not* meet the agreed upon calibration standards.

standards. As discussed in detail in the Declaration of Philip C. Hunsucker, most of this evidence was not disclosed or otherwise available at the time of filing the Original Motion.

**A. Recently Discovered and Previously Unavailable Information Not In the Administrative Record Demonstrates that the Model Was *Not* Calibrated as Required by the Tech Memo 1 Quantitative Standard.**

The Final Model Documentation report obfuscates whether the Model meets the Tech Memo 1 quantitative standard. According to Appendix B1 of the Final Model Documentation Report:

For the water column, interpretation of observations was straightforward and permitted direct comparison of observed values and model results. However, interpretation of sediment observations was not straightforward. Representative sediment conditions applicable to broad areas are difficult to accurately determine from observations at individual points or along a line. For the water column, relative differences between observed solids and PCB concentrations and model results were within  $\pm 30\%$ . Relative differences for the sediment column were much larger. *Nonetheless, the wLFRM was able to capture the trend and magnitude of inferred PCB concentration changes over time in surface sediments. Given these considerations, the wLFRM calibration was judged to adequately meet the criteria identified in Technical Memorandum 1.*

Exhibit 11, AR at DOJEPAN062221-222 [Final Model Documentation Report, Appendix B1] (emphasis added).

Based on recently discovered and previously unavailable information, it is clear that Dr. Velleux who was the principal author of the above-quoted text knew that the  $\pm 30\%$  standard was a *quantitative* standard. After all, Dr. Velleux explained the need for this quantitative standard in Tech Memo 1 to David Glaser, Ph.D., of the U.S. Fish and Wildlife Service as follows:

From [WDNR's] perspective, the FRG's position was "we'll know a good model when we see one." *This is the reason why quantitative model evaluation criteria are necessary. Without quantitative evaluation criteria, model development and application can become open-ended; it is never clear when or if model performance ever reaches the threshold of acceptability.* The Department is (and remains) unwilling to permit the FRG to use an open-ended model development efforts as a means to advocate a more favorable position for Superfund or NRDA settlement efforts. *Quantitative model criteria are one*

*means to keep model evaluation efforts focused on technical rather than purely advocacy issues.*

Exhibit 15 at E-WDNR-649622 [Velleux letter to David Glaser] (emphasis added). According to Dr. Velleux, “The purpose of TM1 is to serve as a quality assurance plan for evaluating model performance. In this light, quantitative model evaluation metrics are far more than applaudable; *these metrics are clear necessities.*” *Id.* (emphasis added).

Evidence produced by the Governments since June 1, 2012 (Emails, Memorandums and Depositions) demonstrates that attempts to calibrate the Model were plagued with problems, omissions, delays and criticisms from WDNR’s contractor team. Supplemental Declaration of Robert L. Annear Jr. dated September 26, 2012 (“Annear Supp. Decl.”), ¶ 10. For instance, in an email from Mark Velleux to Ferdi Hellweger, WDNR’s consultant, dated April 3, 2000, Dr. Velleux describes to Ms. Hellweger the status of the Model calibration and explains that only sample results from 1989 were used, notwithstanding the fact that the full calibration period was from 1989 to 1995. Exhibit 21 at E-WDNR-292526 [Velleux to Hellweger]. Dr. Velleux acknowledges that the IPX Model is not calibrated at this point except to say that the annual solids load “is reasonable.” Annear Supp. Decl., ¶ 11. This indicates that only a limited subset of the Model calibration period was calibrated for “annual solids loads” only between February 10 and April 3, 2000, which indicates the Model calibration is moving very slowly and hence there are many problems upfront with the calibration. *Id.*

In an email from Mark Velleux to Edward Lynch and Gregory Hill on June 23, 2000, Dr. Velleux advises Mr. Lynch and Mr. Hill that “the calibration is not good (it is poor).” Exhibit 25 at E-WDNR-292698 [Velleux email to Lynch and Hill]. The Model is predicting a sedimentation rate of 0.35 cm/year but the data infers a net burial rate of 1 to 2 cm/yr. Annear Supp. Decl., ¶ 12. Dr. Velleux believes there is enough sediment loading to the Model on an

annual basis but the Model is under-predicting the sedimentation rate, meaning the Model is over predicting the potential for PCB contaminated sediments to migrate in the Lower Fox River. *Id.* Dr. Velleux then notes: “The other (and more troubling) aspect of this is that there is a chance that the net burial rate is so uncertain and it is not an effective model evaluation metric.” Exhibit 25 at E-WDNR-292698 [Velleux email to Lynch and Hill]. According to Dr. Velleux, “Since net burial is a key point in assessing model performance, this merits some thought. We can’t ‘swag’ the net burial issue. Without more detailed quantification, I will not be able to address this.” *Id.*

In a partial email thread from Mark Velleux to Edward Lynch and Gregory Hill, dated June 24 - 26, 2000, Dr. Velleux noted on June 24, 2000 that he is calibrating the Model for solids from 1989 to 1995 but that the net burial rate will be 0.35 cm/yr. (average is 0.7 cm/yr.). Exhibit 26 at E-WDNR-292695 [Velleux email to Lynch and Hill]. The data though indicates a net burial rate of 1.4 cm/yr. that is 4 times what the model is showing. Annear Supp. Decl., ¶ 13. Dr. Velleux stated: “So, the bottom line here is that I am proceeding *as if*: 1) the present model set-up is an appropriate calibration; and 2) we will be able to quantify that net burial rates in the river have decreased over time.” Exhibit 26 (emphasis added).

Based on a review of the Model calibration in Appendix B1 of the Final Model Documentation Report, the net burial for river reaches 1 to 4 were +0.43 cm/yr., -0.03 cm/yr., +0.25 cm/yr., and 0.12 cm/yr. (Table 4-7, Page 84), indicating the Model’s net burial rate was still being under-predicted compared to data which ranged as high at 1.4 cm/yr. (Table 4.7). Annear Supp. Decl., ¶ 14. As a result, it is clear the Model is not well calibrated to the net burial rate that is an essential component of the Model. *Id.*

Dr. Velleux emailed Edward Lynch on June 29, 2000 regarding “Pull the plug?” for a meeting with EPA to discuss model performance. Exhibit 27 at E-WDNR-292694 [Velleux email to Lynch]. In it, Dr. Velleux stated: “***Until model performance reaches an acceptable level, I do not recommend presentation of results.***” *Id.* According to Dr. Velleux, “If the ***solids model calibration*** does not meet ***minimum quality*** by the end of the day on 6/29, ***I will not be able to complete a PCB calibration*** (and a presentation) in time for 7/6.” *Id.* (emphasis added).

Two months later, the Model still does not meet the “minimum quality.” *See* Exhibit 29. On August 30, 2000, Edward Lynch emailed Dr. Velleux and Gregory Hill regarding a pre-meeting to prepare for the postponed meeting with EPA. Exhibit 29 at E-WDNR-274819 [Lynch email to Velleux and Hill]. Mr. Lynch asks Dr. Velleux for an “***email that provides the various calibration figures, tables, etc.*** that got us through calibration and what is necessary prior to us being able to run any forecasts using the model.” *Id.* Then, Mr. Lynch makes clear that he is passing the buck to Dr. Velleux and Mr. Hill to decide if the Model is calibrated:

Mark and Greg; As ***I have said before (and I will say again), I cannot be the decision-maker or judge of the adequacy of the Fox River model.***<sup>12</sup> ***I am relying on the WT program, specifically the Water Quality Modeling Section, to make that determination. I am also relying on WT to prepare the necessary input files and documentation for this model as well as other model documentation for which DNR is responsible.***

Exhibit 29 at E-WDNR-274820 (emphasis added).

Later the same day, Dr. Velleux responds:

This bullet gives me the impression that Ed now has questions regarding the nature of the results obtained from the river model. ***It looks Ed proposes that some degree of decision-making regarding the fitness of the river model fall to you and/or me to certify the “fitness” of the model for use in the RI/FS. I do not understand this request.*** I have spent 10 months researching and developing a whole river model for the RI/FS. I presented these results to you, Ed, and Bruce

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<sup>12</sup> “The Fox River model” is the wLFRM.



in informal meetings in July. To the extent that valid model-data comparisons can be drawn, I demonstrated model performance. ***In particular, I noted that model meets performance goals measured by the water column metrics identified in Tech Memo 1. I also noted that the limitation to this assessment was that sediment metrics could not be applied because of the difficulty in assembling data to make a valid examination of time trends in sediment PCB levels. I then offered the opinion that model development looked complete because further development would require making assumptions regarding erosion potential and sediment PCB time trends. It was my understanding that you, Ed, and Bruce concurred with this opinion. With that concurrence (i.e., the decision that model development was complete), I then delivered loads to HQI and exposures to TR and QEA.***

***As you are well aware***, the process assess the performance of a complex model is by nature also complex. In the model development effort, I have examined the data used to assign model parameter values as well the data used to assess performance. ***The data permit assessment of water column metrics. For those water column metrics, model performance meets the goals identified in Tech Memo 1. The data do not permit development of unequivocal sediment metrics.*** It was therefore difficult to assess model performance with sediment metrics. In my discussions with you and Ed I have described the limitations associated with that aspect of model performance. Given those limitations, I offered the opinion that model development had reached a reasonable conclusion.

Exhibit 29 at E-WDNR-274819 (emphasis added).

Dr. Velleux knew that the Model failed the quantitative  $\pm 30\%$  standard for PCBs in sediment before the Model was declared “calibrated” by WDNR. Exhibit 5 at 194:9-195:3, 201:14-204:20 [Velleux Depo.]. Furthermore, Dr. Velleux explained the failure to meet the  $\pm 30\%$  standard quantitative standard to his superiors at WDNR, including the project manager for the Site, Edward Lynch. Exhibit 27 [Velleux email to Lynch]. The response of his superior, Edward Lynch, was to make Dr. Velleux alone the person to decide whether the Model was “calibrated.” Exhibit 29 [Lynch email to Velleux]. Dr. Velleux was forced to make this decision under extreme time pressure and a threat from his superior that use of Dr. Velleux’s IPX Version 2.7.4 computer program might be abandoned. Exhibit 22 [Gregory Hill email to Velleux].

Deposition testimony from Mark Velleux makes it clear that in the end Mark Velleux alone was left to decide if the Model was “calibrated,” even though everyone at WDNR knew

that it did not meet the agreed upon metrics of Tech Memo 1. Exhibit 5 at 194:9-195:3, 201:14-204:20; Annear Supp. Decl., ¶ 19. Mark Velleux eventually wrote Appendix B1 to the Final Model Documentation Report Model claiming that “the wLFRM was able to capture the trend and magnitude of inferred PCB concentration changes over time in surface sediments. Given these considerations, *the wLFRM calibration was judged to adequately meet the criteria identified in Technical Memorandum 1.*” Exhibit 11, AR at DOJEPAN062221-222 [Final Model Documentation Report, Appendix B1] (emphasis added). The results of the allegedly “calibrated” Model ultimately were relied upon for the Proposed Remedial Action Plan for the Site, eventually published in October 2001. AR at WDNR043002560.

**B. Recently Discovered Documents Demonstrate that WDNR Employees and Its Contractors Reviewing the Model Results Told Decision Makers that the Model Was Not Calibrated Before the Remedy Was Selected.**

The purpose of the Model was to “prepare long-term projections of the *trend* and magnitude of PCB concentrations in the river for a range of different sediment management cases.” Exhibit 11, AR at DOJEPAN062222 [Final Model Documentation Report, Appendix B1] (emphasis added). Not only did the Model fail the Tech Memo 1  $\pm$  30 % quantitative standard for PCBs in sediment and hindcast standard, it is doubtful this data could even be used to calibrate the Model. Annear Supp. Decl., ¶ 20. As a result, the Model cannot reliably predict sediment concentrations in the forecast simulations because the data necessary to calibrate it was insufficient. *Id.* Nevertheless, the WDNR continued to rely on the Model. *Id.* The discussion in the bullets below provide a timeline of the comments from WDNR employees and contractors that make it clear that the WDNR knew the results of the Model were not reliable before the remedy was selected:

- October 25, 2000: The WDNR’s entire contractor team is unanimous that the Model should be calibrated not just to the PCB concentration in the water column but also to PCB concentrations in the sediments to effectively evaluate sediment

remedial alternatives and to have more confidence in the Model's ability to predict sediment concentrations. Exhibit 30 at E-WDNR-285520-23 [Memorandum from Tim Thompson of ThermoRetec ("Retec") to Lynch and Hill].

- May 18, 2001: Mark Velleux requests that someone with expertise interpreting statistical results review a draft of Appendix B1, the report on the Model. Exhibit 32 at E-WDNR-311045 [Velleux email to Hill].
- June 5, 2001: Paul Rasmussen of WDNR presents his statistical review of Appendix B1 and states:

A major difficulty with estimation of trends in Fox River sediment PCB concentrations is that the data were not collected as part of a study designed for this purpose. In some years (e.g., 1989) samples were collected from throughout the river, in other years samples were collected primarily from either more contaminated or less contaminated sites. In this situation it may be difficult or impossible to separately estimate the effects of both time and location. Another factor known to affect observed PCB concentrations is analytical methods as described in Appendix B. Because analytical methods were not standardized during the period of data collection, it is difficult to carry out an analysis that accounts for their effects on the PCB concentrations.

Exhibit 34 at E-WDNR-311539-40 [Rasmussen Memo] (also produced at AR at WDNR059002314, without accompanying emails). Accordingly, Mr. Rasmussen concludes: ***"In this situation, I would be hesitant to base management decisions on estimates of temporal trends determined from data collected without a design developed specifically for the estimation of such trends."*** *Id.* (emphasis added).

- October 2001: Proposed Remedial Action Plan Published. Exhibit 9, AR at WDNR043002560-97.
- October 2001: Comments were received from the public. Annear Supp. Decl., ¶19.
- Late 2001 or early 2002: Mark Velleux had left the WDNR to enroll in a Ph.D. program at Colorado State University, so the WDNR asked Dr. Xiaochun Zhang to prepare responses to comments on the Model. *Id.*, ¶ 23.
- Between approximately January and June 2002: Dr. Zhang began a search for components of the Model. *Id.*
- June 6, 2002: Dr. Zhang discovers Dr. Velleux's mistake in failing to include the process of pore water diffusion of PCBs from the surficial

sediments to the water column in the calibrated Model or 100-year forecast simulations, even though the Fox River Group (FRG) considered this a significant pathway of PCBs from the sediments to the water column. Exhibit 57 at E-WDNR2-482811 [Zhang email to Hill].

- June 6, 2002: Dr. Zhang discusses Wisconsin Tissue's comments on the PCB data in the river showing a strong downward trend in the PCB concentrations that is not shown in the wLFRM results. Exhibit 56 at E-WDNR-327909 [Zhang email to Lynch]. This indicates that the Model is not calibrated against the Site data. Annear Supp. Decl., ¶ 24.
- June 6, 2002: Mr. Lynch responds to Dr. Zhang's June 6, 2002 email and states that WDNR cannot redo a sediment analysis every time new sediment core data is collected, and directs that no new analysis be conducted beyond the work done by Dr. Velleux in the appendix to the Appendix B1 Final Model Documentation Report. Exhibit 56 [Lynch email to Zhang].
- On June 26, 2002: Dr. Zhang criticizes comments from Wisconsin Tissue regarding the failure to include additional data in the Model. According to Dr. Zhang:

It is well known the distribution of sediment contamination in river sediments varies greatly in space as described in Appendix B of FS report [WDNR, 2002]. *These data could hardly be used to conclude a temporal trend with certain accuracy.*" and *"It is believed that in order to produce credible trend analysis, one has to compare the data collected in different time for similar locations. Otherwise, high uncertainties will result."* Exhibit 58 at E-WDNR-197106 [Zhang email to Hill] (emphasis added). This type of work was never performed by the WDNR. Exhibit 3 at 101:20-102:16 [Zhang Depo.].<sup>13</sup>

- July 31, 2002: Dr. Zhang writes to Greg Hill regarding "summary of the modeling efforts for the Fox River, stating "the attached file is the draft I got. *We need to discuss this because I do have some concerns of the model.*" Exhibit 59 at E-WDNR2-482781 [Zhang email to Hill] (emphasis added).
- Post-July 31, 2007: After Dr. Zhang's July 31, 2002 email, WDNR hired Dr. Velleux on a contract basis to help with the response to comments. Annear Supp. Decl., ¶ 29.

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<sup>13</sup> This is the same problem pointed out by Tim Thompson (Retec) to Edward Lynch and Gregory Hill on October 25, 2000. This email echoes Mr. Rasmussen's memorandum and demonstrates that the sediment concentration data was not sufficient to calibrate the Model. Annear Supp. Decl., ¶ 24.

- August 29, 2002: Dr. Velleux writes to Edward Lynch about comments from Retec, WDNR's contractor, on the model:

For what it's [sic] worth, I've seen the proposed responses XZ<sup>14</sup> crafted as well as the proposed "white paper". *It is also my understanding that Mr. Hill<sup>15</sup> is representing: 1) that his staff do not have the technical skill to address these issues; and 2) that the wLFRM ("the product of Velleux") "is little value in its present form" in the opinion of XZ. Given what I've seen, I can understand your concern that the proposed responses do not really address the comments in a meaningful way.*

You need to define a work product. Given the mantra of "better, faster, cheaper: pick any two", you have to decide how you want to optimize this. *If you can live with the responses XZ/Hill have proposed, you are done. If you want a better product, define a scope of work and let's work out a contract and schedule.*

Exhibit 60 at E-WDNR-197054 [Velleux email to Lynch] (emphasis added).

**VI. IN THE EVENT THE COURT DOES NOT GRANT RECONSIDERATION ON ITS OWN DISCRETION, THE GOVERNMENTS' BAD FAITH ACTIONS JUSTIFY CERTAIN DEFENDANTS' REQUEST FOR SUPPLEMENTATION OF THE RECORD.**

As discussed above, recently discovered evidence obtained by the Certain Defendants clearly establishes the Governments knew the Model was not calibrated in accordance with the Tech Memo 1 quantitative standards, knew the Model was not properly documented and knew the Administrative Record did not contain all of the relevant information. Nonetheless, the Governments relied on the results of the Model and selected the remedy that it now seeks to impose against Certain Defendants at trial. This evidence of the Governments' bad faith is sufficient for the Court to permit supplementation of the Administrative Record exist under the applicable principles of administrative law. The evidence of bad faith is contained in the Declaration of Philip C. Hunsucker and the Supplemental Declaration of Robert L. Annear Jr. (filed concurrently with this Motion for Reconsideration).

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<sup>14</sup> "XZ" is code for Dr. Xiaochun Zhang of WDNR.

<sup>15</sup> "Mr. Hill" is Gregory Hill of WDNR.

## **VII. CONCLUSION.**

For the reasons discussed above, this Motion should be granted. The Court should:

1. Make clear that by quoting Dr. Zhang on calibration (Dkt. 498 at 3 and at 6), the Court did not mean to decide that the Certain Defendants cannot challenge whether the Model actually was calibrated, using information contained the Administrative Record.
2. Allow expert testimony on the lack of calibration of the Model, and its impact on the decision to approve the remedy. Specifically, expert testimony would be helpful to the Court in assessing the impact of a failure to calibrate the Model. The Expert Reports of Robert L. Annear Jr. and Ken J. Susilo filed with this Motion at Exhibit 64 and Exhibit 65 set forth the scope of the expert testimony concerning the failure to calibrate the Model and the effect of that failure.

Dated: October 4, 2012

/s/ Philip C. Hunsucker

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